

Title (en)

APPARATUS AND METHOD FOR INSERTING A COMPONENT THROUGH THE SURFACE OF A WORKPIECE

Title (de)

VORRICHTUNG UND VERFAHREN ZUM EINFÜGEN EINES BAUTEILS DURCH DIE OBERFLÄCHE EINES WERKSTÜCKS

Title (fr)

APPAREIL ET PROCÉDÉ PERMETTANT D'INTRODUIRE UN ÉLÉMENT DANS LA SURFACE D'UNE PIÈCE À USINER

Publication

EP 2643121 A1 20131002 (EN)

Application

EP 10860077 A 20101123

Priority

CA 2010001888 W 20101123

Abstract (en)

[origin: WO2012068663A1] A rotary tool (11) for use with a rotary driving unit (12) for inserting a component (14,14',14'') through a surface of a workpiece made of a material showing friction-induced plasticity such as aluminum, includes a tool body (22) having a working end (24) defining a shoulder portion (26) and a securing device (28,28') for selectively engaging the component to impart rotation thereof in a first direction while applying an axial force of a sufficient magnitude onto the component to produce insertion thereof by plasticizing the material through friction. The shoulder portion is provided with a deburring device (34) capable of being displaced from an inoperative position upon rotation of the tool body (22) in the first rotation direction (30), to an operative position whenever the tool body is caused to rotate in an opposite direction (30'), to provide deburring of the workpiece surface.

IPC 8 full level

B23P 19/00 (2006.01); **B23B 47/34** (2006.01); **B23K 20/12** (2006.01); **B25B 27/14** (2006.01)

CPC (source: EP US)

B21J 5/063 (2013.01 - EP US); **B21J 15/027** (2013.01 - EP US); **B21K 25/005** (2013.01 - EP US); **B23B 51/101** (2013.01 - EP US); **B23K 20/127** (2013.01 - EP US); **B23P 19/00** (2013.01 - US); **B23P 23/00** (2013.01 - US); **B23K 20/125** (2013.01 - EP US); **B23K 20/1255** (2013.01 - US); **Y10T 29/49945** (2015.01 - EP US); **Y10T 29/53978** (2015.01 - EP US)

Designated contracting state (EPC)

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

DOCDB simple family (publication)

WO 2012068663 A1 20120531; CA 2818740 A1 20120531; CA 2818740 C 20151229; EP 2643121 A1 20131002; EP 2643121 A4 20170816; EP 2643121 B1 20180822; EP 3406395 A2 20181128; EP 3406395 A3 20190403; US 2013239397 A1 20130919; US 9120188 B2 20150901

DOCDB simple family (application)

CA 2010001888 W 20101123; CA 2818740 A 20101123; EP 10860077 A 20101123; EP 18182985 A 20101123; US 201013988806 A 20101123